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# CHART OF THE BANK OF LAGULLUS.

ALL the Charts of the Bank of LAGULLUS, that I have seen, are so very unlike the truth, both in respect to its figure and extent, the depths of water, and the setting of the current; that I have attempted to construct such a one, as may convey some degree of information on all the above points.

The soundings between the *Cape of Good Hope* and *Cape Talbado* are taken from the best Journals that I could find: and the remainder (those near the *River Infanta* excepted) are copied from the new NEPTUNE ORIENTALE.

The coast from the *River Infanta* to *Cape Lagullus*, is chiefly copied from the same book; as is also that between *False Bay* and *Table Bay*.

The land about *Cape Lagullus* is laid down according to my own observations last year.*

The *St. Croix* Islands in the neighbourhood of *Algoa Bay*, are from the report of *Manuel Musquito de Perestrello*.

The four remarkable mountains between *Algoa* and *Muscle Bays*, are laid down according to the bearings in the plan of *Algoa Bay*, in Mr. Dalrymple's *Plans of Ports*: and corroborated by my own observations last year.†

The situation of the *Doddington's Rock*, is according to Mr. Webb's sketch, which appears to be tolerably accurate in respect to *Algoa Bay* and *Point Patron*.

It may appear like presumption in me, who poſseſs so little experience in my own person, to offer my advice to a body of

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* This was originally printed in December, 1778.

† The late observations of Capt. Morgan, of the Pigot, who, in May, 1785, put into a bay, in lat. 34° 3′, supposed lon. 26° east from Greenwich, convince me that the whole coast between Cape Talhada and Point Recifs, is laid down 6 or 8 miles too far northwardly, in this chart. The bay in which he anchored was called by the Dutch settlers, *Kroom* River Bay; and by Capt. Morgan, Bay St. Francis. From this bay, the Round Mount, or Haycock, bore NW; the Craggy Mount N 19 E; and the easternmost land in sight (supposed to be Cape Recifs) E 15° 45′ S, distant 8 leagues. The sharp peak was not visible from the bay. These bearings were by compass. The bay was open from ENE ½ N, to S 20 W, and a large swell came in: but the anchorage was good, and the refreshments in plenty for a single ship.

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experienced men. But the truth is, that I derive my knowledge chiefly from *their own* observations on record; and that although they may severally have made their remarks on such *parts* of the Bank, &c. as fell under their notice, yet few, if any of them, have been enabled to form a general idea of the *whole*. I shall therefore insert some remarks which occurred to me during the examination of the Journals; and also during my paſsage round the Cape last year.

The *setting* of the *current* seems to be a subject not fully understood; insomuch that many have aſserted, that at different times it sets in contrary directions in the very same place. It must be observed, that the *main* stream of the current conforms to the direction of the edges of the *Bank*, and not to the *shore;* as is, I believe generally imagined: and that before it reaches the *great* Bank, it takes a wide circuit round by the South, to the North West, between the *Point* of *Natal* and *Muscle Bay*. This winding course of the current, which produces errors of southing and northing alternately in the *reckoning*, together with the incertitude of the ship's position, has undoubtedly occasioned the abovementioned mistake.

It is universally allowed that the current runs strongest during the winter months; and all the Journals that I have seen confirm this opinion. It is, no doubt, influenced in some degree by the winds and other causes at all seasons; and the width of the stream may poſsibly bear a proportion to its velocity. It appears to be from 40 to 50 leagues wide: the widest part being opposite to the *River Infanta:* and the narrowest on the S W side of the Bank. On the east side of the Bank, and about 50 leagues from *Cape Lagullus*, where the current again takes a southerly course, the outer verge of the stream runs into 39° south latitude before it turns to the northward; after which it continues its progreſs (though slowly) along the western coast of *Africa*, and probably beyond the Line. It is felt in lat. 26° in the track from the *Cape* to *St. Helena*.

There appears to be a slow *counter current* setting to S or SE about 40 leagues to the westward of the Bank.

There is certainly no considerable current, if any, a few leagues within the verge of the Bank; a small *drain* excepted, and that too near the land to be profited by, during the winter season. This stream appears to follow the direction of the coast, as far as *Cape Lagullus*, where the form of the shore throws it acroſs the Bank in a SSW, and SW direction, till it joins the main stream.

Ships are carried some miles to the southward, while they are croſsing this stream; which however, cannot be many miles in width.

With respect to the Bank itself, I can offer few remarks more than will occur on a slight inspection of the Chart. The circumstance of the mud soundings on the western part of the Bank, is well known; but, I believe, the extent of them was never before ascertained. The small shells, like the *husks of oatmeal*, seem as peculiar to the east side, as the mud to the west side of the Bank. In short, the quality of the bottom on the south of 35° 15′ (sight of *Cape Lagullus*), may be claſsed in three divisions, *viz.* mud on the west; fine sand mixed with various substances in the middle; and coarse sand mixed with coral and stones on the east. The soundings on the north of 35° 15′ are generally very inconclusive, even with the help of the latitude.

I am of opinion, that the best landfall in coming from the eastward, is the chain of high mountains situated between *Algoa* and *Muscle Bays*; as it rises in several remarkable figures, hardly to be mistaken by those who have either seen them before, or who are in poſseſsion of Mr. Dalrymple's *Plans of Ports in India*, in which some very accurate drawings of them are inserted. Two of these mountains are situated in about 33° 45′,* and within 10 or 12 miles of the coast; the westernmost of which rises in a very *sharp peak*, the other in the form of a *haycock*; two others lie farther to the NE, the one *flat*, the other *craggy*; the places of all the four will be found in the Chart. The two first I saw very distinctly at 25 leagues distance, when the weather was hazy, so that at common times they must be visible in latitude 34° 50′, which I take to be the proper parallel to keep in.

During the winter months, when the westerly winds are so common, the paſsage round *the Cape* will be the most speedily effected by keeping the ship in the stream of the current, and letting her drive round the Bank. I am aware that most commanders prefer keeping *on* the Bank, for the purpose of getting soundings; and in expectation of smoother water and a stronger current than is to be met with farther out.—With respect to the latter, which is undoubtedly the prime object, they are disappointed, as they find a help of about four or five miles per day only, between *Cape Talbado* and *Cape Lagullus*. All the Journals that I have examined, tend to establish this fact, of which I had ocular proof during five days that I was on the Bank.

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* Capt. Morgan's observations prove that these mountains are further to the south by at least 10 miles.

I am indebted to Captain Waghorn, late of the Ashburnham, for the first hint I received concerning the course of the current round the Bank. He went round it in the Liverpoole frigate in 1764, and in five days had a help of about 160 miles between the meridians of *Cape Talbado* and *False Bay*. The alteration of the current from SW, to NW, in latitude 37°, was so sudden, that it marked the exact time when the ship doubled the point of the Bank.

In paſsing near *Cape Lagullus*, I observed that the Cape itself, as well as the land, for many miles to the westward of it, is too low to be seen more than six leagues from an Indiaman's poop; and that about nine miles WNW, from the same Cape, the land rises high enough to be seen nine or ten leagues. Of course this high land is set for *Cape Lagullus*, by those who pass too far off to see the low land (as most do). Those who pass it from the westward, with a *scant* wind from the southward, and only arrive in sight of the high land in the evening, should be aware of this circumstance.

The variation lines in the Chart are adjusted to the observations taken by Captain Waghorn last year (1777). It has increased of late years, in the proportion of one degree in eight years, within the tract laid down in the Chart.

It has been remarked, that the lines of variation ought to be more meridional, than I have drawn them in the Chart. I mention this remark, without knowing whether there be any foundation for it.

London,
November 30, 1778.

J. RENNELL.

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## ADDITIONAL REMARKS, IN 1797.

William Petrie, Esq. M. P. (and late second in Council at Madras) having obligingly communicated a Journal kept by him on board the Manship East India ship, on his return to England in 1789, in which the principal Points of the Track are determined by the mean of several Chronometers; I have inserted as much of this Track as falls within the compass of the Chart of the Bank of Lagullus, published at the expence of the Hon. East India

Company in 1778. It will be found to corroborate a most important part of that Chart: that is, the *position* of the east side of the Bank; and the *direction* and *velocity* of the current, in that quarter. There are also some few casts of soundings, that either agree with the Chart, or at least, do not contradict it. Some other soundings, taken by Capt. Hall of the Worcester, (1786) towards the SE part of the Bank, (communicated also by Mr. Petrie) shew that there is, in one place, a greater variation in the depths, than had been expected.

It appears also, that Capt. Hall had Soundings, far to the southward of any that are marked on the Chart. And there being other reports of Soundings still farther South, particularly those by the *Telemaque* in 37° 20′, it may be supposed that the Bank either extends in a narrow slip, to the southward, between the Meridians of Lagullus and St. Blaise; or that there are detached Banks in that position. The current is also known to continue its southern (or SW) course to the parallels of 38°, or 39°, before it turns northward, to pass the Cape: and at it conforms to the *edge of the Bank* in most other places, this seems to be an indication of the continuance of the Bank, southward, far beyond the extent of our knowledge, as expressed in the Chart in question.

In 1786, the French vessel *Telemaque* came on a spot of shallow water,[*] in lat. (by account) 38° 52′: longitude uncertain, she having been 15 days from the Cape, outward bound. Her Journal was examined, and wrought up to the place of the Shoal, by Capt. Hall. On the preceding day, the latitude was 37° 20′; longitude, by reckoning, 22° 45′: and they had soundings at 100 fathoms,[†] *greenish sand*. Now as it must be expected that the vessel had been for some days subject to the effect of a N W current, the longitude of course ought to have been much more westerly. This is also countenanced by the longitude in which Capt. Hall found 110 fathoms, in the parallel of 36° 50′, which was to the S E by S of Cape Lagullus, and consequently about 21° 40′: therefore, we should not expect 100 fathoms in lat. 37° 20′, on the eastward of that Meridian.

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[*] It appears that rocks were seen *under* the ship, and extended to some distance; but that *no soundings* were taken. It has happended to most seamen, that they have at some time or other been alarmed by the same appearances, although on sounding, a considerable depth of water has been found; sufficient to keep *any* ship out of danger, in *any* weather. But it may also happen, that some prominent part of the rock may rise above the rest, and present a *certain* danger; so that the parallel should be avoided.

[†] Perhaps 108 English fathoms.

From the station in 37° 20′, the course of the *Telemaque* was S 22 W, 99 miles (corrected) to the Shoal; which would therefore lie in lat. 38° 52′; lon. 21° 57′, according to the reckoning: but for the reason abovementioned, it should lie much more westerly; perhaps in $20^{\circ}\frac{3}{4}$. And as there was no observation of latitude on that day, there is no certainty of its parallel; because the N W current must have affected the ship, during some part of the last 24 hours. If such a shoal does really exist (and why should it be doubted?) it ought in my idea, to be looked for, to the *northward* of 38°, 52′. And, in effect, it appears to lie quite out of the Tracks of our ships, both in going and returning, under almost any circumstances.

The principal difference between the Chart, and Mr. Petrie's Observations, appears to be in the direction and velocity of the current, in the open sea, at a distance to the eastward of the Bank. It is however to be mentioned, that my idea of the current in that quarter, was founded principally on what we saw and remarked in 1777 in the Ashburnham, whose Track lay near a degree to the north of the Manship's. If our remarks had any truth in them,* the westerly current, between the Meridians of Algoa and Catherine Bays, was very strong near the parallel of 35°, or near the edge of the Bank. And indeed, the rapidity of the stream along the east side of the Bank, at a *lower* point, can only be accounted for, by the supply of water from above.

It is proper to observe, that the Egmont East India ship (about 1755,) felt that stream of southerly current, which takes its direction from the lands of Natal, beyond 37°, in the Meridian of Algoa Bay; but was not sensible of any other current, in going westward, until she approached the eastern edge of the Bank, in about $36^{\circ}\frac{1}{2}$; where she was caught by that remarkable southerly stream, which appears to take its direction from the Bank; and which, from *that* direction, joined to its exceeding great rapidity, (regard being had to the nature of the currents on the way thither from the eastward,) forms an unequivocal mark for the longitude of the position. I shall here state the quantity of the *southern set*, as experienced by 5 different ships, during the space of 24 hours, when near the edge of the Bank, between the parallels of 35½ and 37½.

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* They convinced us that the current had also so much *northing* in it, between the Meridians of the River *Infanta* and *Muscle* Bay, as to set the ship, from 24 to 26 miles each day (or 74 in 3 days) to the north of account.

To this *northerly current* we ascribe the error of the *Doddington*'s reckoning, when wrecked in the mouth of *Algoa* Bay.

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| The Egmont, 1755 | 50 Miles. —— | | Winter. |
| Liverpool, 1764 | 40 —— | In June. | |
| Ashburnham, 1777 | 49 —— | July. | |
| Ponsborne, 1769 | 40 —— | December. | Summer and Autumn. |
| Manship, 1789 | 33 —— | April. | |

The particular direction of this current is known only, in the case of the Manship; she *alone* having timekeepers on board. With her, it set exactly SW; and consequently, at the rate of about 47 miles in the 24 hours. If it be supposed to *set* the same way, at all times, this rate is the slowest of all on record.

Mr. Petrie's Journal is particularly satisfactory concerning this part of our subject. On the 7th April, in advancing W N W from the parallel of 36°½, the current had set 12 miles, only, and that to the *west*. On the 8th the course by reckoning was between the N by W and N N W, about 36 miles; but the timekeepers and observations shewed that the true course had been west, 45 miles; the ship having been set 33 miles to the South, and as much to the West; or 47 miles to the S W. At this time they found themselves on the steep eastern edge of the Bank, in 140 fathoms; latitude 36°¼. Six hours before, or about 12 miles to the N. Eastward of the noon station, they found no ground at 170 fathoms: and again, at about 5 miles to the W S W of the noon station, they found 170 fathoms. These circumstances, altogether, indicate very strongly the position of *this* critical part of the Bank, over which lies the fairway to the Cape, when the wind is fair.

On the 9th they were advanced so far westward, as the *middle* of the Bank; and into *still* water. It appeared, however, that the current had, during some part of the 24 hours, set them 13 miles to the South, and 17 to the West: or 21 miles to the S W by W. This *set* we regard as the continuation of the former current, whilst their course lay obliquely through it; which is moreover, indicated, by their *deepening* the water 30 fathoms on a N W course (by reckoning) of 3 miles from the noon station. It is worthy of remark, that in the Ashburnham, we experienced the like circumstances, of current, within nearly the same space, and under nearly a similar course: for we were carried 16 miles to the southward. And as, on the other hand, the Ponsborne and Egmont, whose courses lay near the Meridian, were carried 36 and 37 miles to the southward, on the day *after* they had passed the parallel and position above described; and in the way to which, on the preceding day, they had respectively been set 40 and 50 miles to the southward;* we have a pretty clear proof that the rapid part of the stream, is confined to a narrow space, (perhaps 20 leagues in breadth) and does not advance very far within the edge of the Bank. In the Ashburnham, no trace of a current appeared on the inner part of the Bank, or within the depths of 80 or 75 fathoms; although we several times sounded, in calm weather.

According to Mr. Petrie's Journal, the middle part of the great S W stream may be taken at 22°½ longitude, in the parallel of 36° 15′: and as the line of its course may perhaps be taken on the whole at S W by S, between the parallels of 35°½ and 37°½, the intermediate longitudes may be collected from the respective parallels.

It may be inferred from what has appeared, that if a ship was by accident kept in the stream of this current, she would be carried so far to the South as 38° at least: that is, quite out of her Track, in respect to the absolute course; but even if this happened, during the season of the N W winds, to a ship coming from the eastward, there is, in my idea, no other Track, that promises so speedy a passage to the Cape.

I am still of opinion that the best parallel to keep in, in coming from the eastward, in order to have the greatest help from the current, during the Winter season, is 35° or thereabouts. Not only will the strongest, and most favourable stream of current be found there, but the ship will be farther to windward (in respect of the prevalent winds); and will also be more in the way to profit by the current along the eastern side of the Bank. The Manship, by being so far to the South as 36°, appears to have been removed from the effect of the westerly current; having no more than 20 miles westerly set, in running down 3° of longitude.

As for the S E current, of 18 and 24 miles per day, experienced by the same ship, in the place where I expected to find a S W current, it is to me a very unaccountable circumstance: but if it is constant, it proves, at least, that 36° is not the proper parallel to keep in.

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* The Egmont was carried in all 123 miles to the south in 4 days, between 36°½ and 38°: her course was to the eastward of south (by reckoning) which kept her so long in the southerly current. It changed to the northward in 38° and upwards.

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J. RENNELL.

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